HONEYWELL

SERIES 200

HONEYWELL NEWSPAPER, PRINTING, AND PUBLISHING SYSTEMS

STET DICTIONARY HYPHENATION SYSTEM

Honeywell's hyphenation system breaks words for copy preparation with better than 99% accuracy, requiring on the average less than 75 milliseconds per hyphen. The system consists of a basic dictionary containing approximately 18,000 words with hyphenation points indicated, a set of dictionary lookup and logic routines, and a dictionary update program.

The basic STET dictionary can be augmented for use with Honeywell routines which hyphenate publications utilizing special vocabularies or languages other than English. Dictionary size is limited only by the available storage capacity.

The special techniques employed in indexing the dictionary and in the search logic ensure that the maximum search time for any word in the basic dictionary is 116 milliseconds where the storage device is a Honeywell Type 270 Drum. If the number of words is doubled, the maximum search time is 174 milliseconds. Average access time is under 75 milliseconds for the basic 18,000-word dictionary. The basic search logic can be modified to speed up searches of dictionaries larger than 100,000 words.

In addition to the main dictionary, STET's hyphenation system also contains provisions for a small "immediate insertion" dictionary which is used to indicate hyphenation points in words which are not in the main dictionary and for which the risk of incorrect logical hyphenation is too great. The copy editor uses the immediate insertion dictionary in the normal course of copy input by indicating with a special code the hyphenation points in a word. When STET encounters these codes, it stores the word and its hyphenation points in a special section of the dictionary. Thereafter, the information may be accessed as necessary to hyphenate the word. Words remain in the immediate insertion dictionary until a main dictionary update run is performed, at which time they are incorporated into the main dictionary.

The basic dictionary is available on both magnetic tape and paper tape for loading onto a drum or mass memory file. The dictionary may also be kept on magnetic tape in situations where access speed is not critical. In such cases, it is advantageous to split the dictionary over as many magnetic tapes as possible so as to minimize tape passing time.

The STET system described above provides fast, high accuracy hyphenation for use in computerized copy preparation. The routines are also adaptable to other applications such as abbreviation dictionaries.

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For those wishing to move quickly into a straightforward torn-tape operation, STET-1 is available as a completely coded, well-documented, independent package. On the other hand, STET-1 was written as a series of linked subroutines, thus facilitating modification, extension, and integration of the package into a large system.[1]

Among the special features of STET-1 are:

- Multi-font operation

- Full quadding facilities, including split quadding (copy laid out flush with left and right margins and with white space or leaders between)

- Left, right, or center indents

- Correction facilities

- Up to 99 preset tabular formats, each of which may be selected by an input code and which make the keyboarding of tabular copy as easy as straight matter (Each format may be preset to the user's specification.)

- Dictionary and/or logic hyphenation selected by programmed switch settings

- High-accuracy logic hyphenation

- Special parameter messages to condition the program for each of the three major types of copy (These messages each perform the work normally performed by three or more parameter messages.)

[1]STET-1 includes the basic typesetting routine used in the Honeywell Allotter System.

STET-1

Honeywell's STET-1 is a comprehensive typesetting system providing facilities for the layout, justification, and hyphenation of all types of copy for hot-metal linecasters. STET-1, running on a Series 200 computer, simplifies and speeds up the setting of straight matter, classified copy, and tabular material.

Copy layout is specified to STET-1 by means of a set of easily-remembered parameter messages. Special care was taken in the design of the parameter messages so as to enable easy conversion from manual linecaster or conventional typesetting operation to keyboarding for the computer. For example, the conventional typesetter single codes used to specify quadding and rail operations have been retained in STET. The training of new copy-keyboarding operators is also simplified by the **Newspaper Copy Keyboarding Guide** prepared by Honeywell especially for Series 200 users.

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STET-3

Honeywell's STET-3 is a high-performance application system designed to service the publishing industry. While providing the same fast, high-quality layout, justification, and hyphenation capabilities as other Honeywell hot-metal systems, STET-3 has been extended to include many additional features.

A copy updating system, closely akin to its PhotoSTET counterpart, has been incorporated into STET-3 to provide the user with a computer-generated proof listing and an easy method of copy correction. Complete facilities for job control and processing are also an integral part of the system.

STET-3 requires a minimum Series 200 computer configuration of 24K characters of main memory, a random access unit, and the appropriate input/output devices.

SOME ADDITIONAL FEATURES OF STET-3

Among the additional features of STET-3 which are of particular interest to magazine, book, and general publishers (other versions of STET being designed specifically for newspaper applications) are:

- Automatic mixer capability

Specifications remain subject to change in order to allow the introduction of design improvements.

- Ligature hyphenation

- Extensions to handle pi characters such as chemical symbols, etc.

- Expanded dictionary format to facilitate handling technical names

- Keyboard control over hyphenation and justification facilities

- Number of fonts expanded up to 1000

- Ragged right

- Expansion to four levels of indention

- Automatic linecaster stop upon completion of operator-specified number of lines

- Additional editing of input for keyboarding errors — and a count of these errors

- Simplified keyboarding

- Small caps

- Single-parameter message to specify multiple line measures and multiple indents

- Elimination of French spacing at beginning of line

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have a good appearance. The addition of three economy tape drives and a printer to the required STET-E configuration provides a system ideally suited to the other data processing needs of small- to medium-sized newspapers, magazines, and other publishing enterprises. For example, this configuration would allow a newspaper with a daily circulation of up to 50,000 to tackle applications such as advertiser-credit checking, cash posting, billing and statement production, payroll, and subscription fulfillment.

In-house backup for the basic production facility can be provided by installing two central processors with switchable peripherals. Here, the true compatibility within Series 200 means that processor types can be chosen independently. For example, a Type 121 processor can be used for typesetting and production, while a Type 201 processor handles the accounting functions. In an emergency, the production programs can be run on either the 121 or the 201. Or — to meet special, high peak-load situations — both processors can be utilized for the same job.

As with all the Honeywell newspaper, printing, and publishing systems, care has been taken to ensure that STET-E can be readily incorporated as a building block in integrated systems. In addition, the comprehensive documentation supplied — which includes an operator training manual as well as a complete narrative description and flow charts — makes it easy for the customer to perform any desired tailoring of programs to meet his requirements. In recognition of the fact that no package can exactly match the needs of all concerns in an industry so diverse as printing, Honeywell also provides advisory assistance in the utilization of all packages supplied.

STET-E

Some prominent newspapers follow the policy of not hyphenating terminal words in copy. This "no-hyphen" policy can be implemented easily by using Honeywell's new economy hot-metal package, STET-E. While STET-E can be run on Series 200 configurations containing an 8,192-character memory, a paper tape reader, and a paper tape punch, it has complete facilities for handling complicated layouts, including full quadding facilities, leaders, indents, pre-set tabulation formats and multi-font operations. These facilities greatly aid the setting of straight matter, advertising copy, and tabular material and enable operators to achieve far greater keyboarding rates with fewer chances for error. In a Model 200 system, STET-E will operate at the rate of 24,000 thirty-character lines per hour.

In the absence of hyphenation, careful control over the manipulation of spaces ensures that printed materials

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PHOTO-STET

Honeywell's Photo-STET is a generalized Series 200 computer application which provides high-performance hyphenation and justification for the printing and publishing industry. Although written primarily for available photocomposition machines, Photo-STET can be adapted to other composition devices by simply writing a special output subroutine.

PHOTO-STET COMPONENTS AND THEIR FUNCTIONS

Photo-STET takes unjustified copy and layout instructions, converts these into justified, hyphenated and formatted copy, and inserts the necessary control codes for typesetting machines. The system uses a single general-purpose justification program with several pre- and post-processor subroutines. These subroutines are specialized to suit particular keyboards on the input side and particular typesetting devices on the output side. In short, the pre- and post-processors serve as translators and coders between the main justification program (which uses its own internal code system) and the machines in a particular composing room.
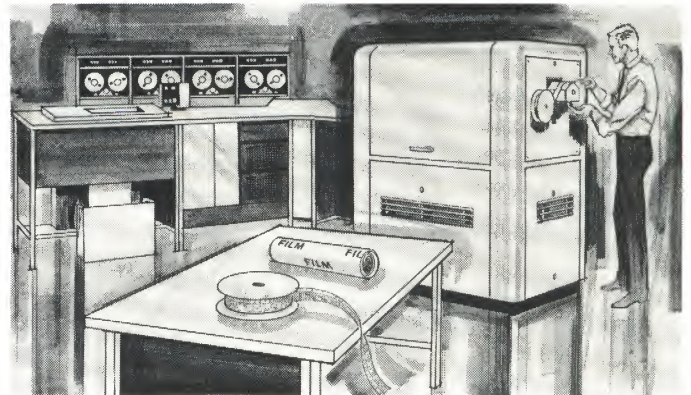
Initially, pre- and post-processors are being coded for a Fototronic 8-level code system. Additional pre- and post-processors are being developed for Teletypesetter 6-level systems on the input side and for Photon 560, Photon 513, Photon 713, Linoquick and Linofilm (the last through a 6- to 15-channel adapter) equipment on the output side.

LAYOUT FACILITIES

The layout facilities in the program include all those provided in the STET-1 hot-metal program.* Additional control parameter messages have been added, permitting the full flexibility of any existing photocomposition device to be exploited. These include disc (or grid) changes, point-size changes, line spacing, and many others. The system is designed to take full advantage of the facilities offered by photocomposing devices presently available. Care has been taken to ensure compatibility between the STET-1 hot-metal program and the 6-level Photo-STET input routine. This will enable the same operator to keyboard either hot-metal work or photocomposition work in a shop using both processes. The parameters are designed to ease the task of specifying copy layout. Among the main layout functions which can be controlled by parameter messages are:

1. Quadding left, right, center, and split.
2. Indenting left, right, and center.
3. Increasing or decreasing indents enabling copy to be fitted to an irregularly shaped space.
4. Tabulation.
5. Nonspace function which cancels the linear space allocated to the next character so that characters may be superimposed. (This is one way of dealing with diacritical marks.)

*See Application Announcement STET-1, Order No. 248.

6. Leadering.
7. Justification of copy to given block dimensions. The computer fits a block of copy to a specified block size by adjusting type size and/or by leading.

COPY STORAGE, MAINTENANCE, AND RETRIEVAL

Also included in the Photo-STET system are facilities for storing copy in mass memory or random access drum storage, for updating and correcting copy in storage, and for extracting and proof-printing selected jobs from the copy library file on a high-speed line printer. A full cycle of processing for a job might consist of input to copy storage from paper tape, layout and hyphenation, proof-printing, checking, correcting, proof-printing, checking and output to photocomposition.

Furthermore, if desired, copy may be keyboarded by type size and/or style (so as to avoid excessive keystrokes for change-font parameter messages), sorted back to its original sequence by the input program for proofing, and finally sent to the photocomposition device (again sorted by type size and style). The last option is of value where the photocomposition device has limited capacity for varying font size or style.

With Photo-STET, the printer or publisher is afforded great flexibility in applying his present equipment and can readily advance to improved technology with a minimum of inconvenience and added cost.

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SimulSTET

SimulSTET is a special hot metal typesetting package designed especially to deal with those situations in which a single Series 200 central processor must not only meet the typesetting needs of a composing room but must also carry on conventional business data processing.

SimulSTET combines the STET hot metal typesetting package with a small monitor program. This monitor allows normal data processing to proceed as long as the composing room has no typesetting work. During this time, all central processor time is allocated to do business data processing which, consequently, proceeds at maximum speed.

When the composing room needs to process some unjustified copy on paper tape, the tape is loaded on the Honeywell paper tape reader. Without any further computer operator action, the monitor program activates the

STET typesetting program and temporarily inhibits execution of the data processing programs. STET then begins justifying the copy and sending the justified output to the paper tape punch. Although the punch operates at 110 characters per second, this does not keep pace with the high internal speed of Series 200 central processors, so that during the typesetting process, not all central processor cycles are used. In practice, unused central processor time amounts to 40 to 70 percent of the total time required to punch the justified copy. The monitor makes this unused time available to the business data processing programs so that they may continue to operate in a time-sharing mode even while typesetting is going on. However, since STET gets highest priority and always runs at full speed, a data processing program which requires a large amount of central processor time — as opposed to one requiring a lot of peripheral activity — may be slowed slightly while STET is running.

The minimum configuration recommended for effective use of this system includes a Series 200 central processor with 24K character locations of main memory, a drum, a paper tape reader, a paper tape punch, and whatever card equipment, printers or magnetic tape units may be required for business data processing. Generally, no restrictions are placed on the data processing programs to run with SimulSTET other than a requirement to communicate with the monitor to obtain read/write channels; this action permits optimal overlapping of input/output operations.

SimulSTET is available as a fully documented, operational package. Further information is available on request.

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